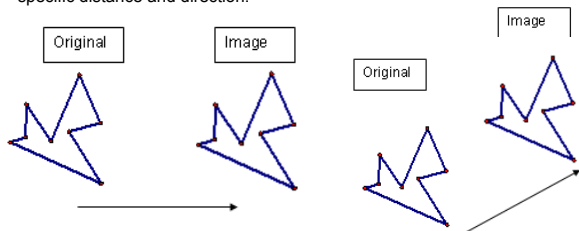


### 3.7 Translations

A **translation** is a transformation that slides a figure. It moves the original a specific distance and direction.



Write the translation mapping:  $(7, 4) \rightarrow (8, 10)$

$(x, y) \rightarrow (\quad, \quad)$

$$(x, y) \rightarrow (x+1, y+6)$$

Translations can be described using coordinates.

$$(x, y) \longrightarrow (x + a, y + b)$$

Ex:  $(x, y) \longrightarrow (x + 3, y - 2)$

Translate the following points using the above translation.

A  $(4, 8) \rightarrow A'(7, 6)$

B  $(-5, 3) \rightarrow B'(-2, 1)$

C  $(2, -6) \rightarrow C'(5, -8)$

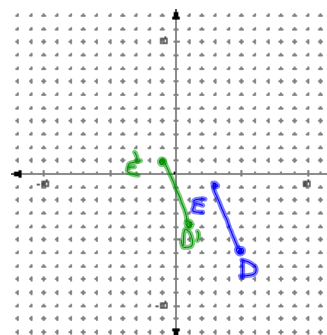
Use the following translation on  $\overline{DE}$ .

Graph the original and the image.

$$(x, y) \longrightarrow (x - 4, y + 2)$$

D  $(5, -6) \rightarrow D'(-1, -4)$

E  $(3, -1) \rightarrow E'(-1, 1)$



Use the following translation on  $\triangle FGH$ .

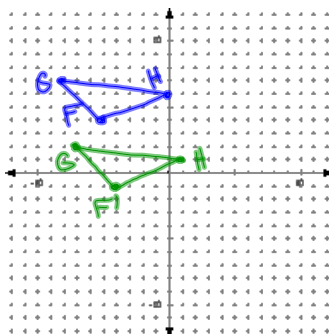
Graph the original and the image.

$$(x, y) \longrightarrow (x + 1, y - 5)$$

F  $(-5, 4) \rightarrow F'(-4, -1)$

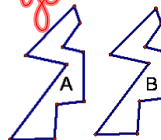
G  $(-8, 7) \rightarrow G'(-7, 2)$

H  $(0, 6) \rightarrow H'(1, 1)$

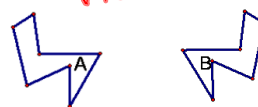


Are the following translations (from A to B)? (Yes/no)

1. **yes**



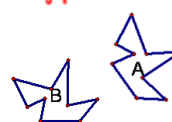
2. **no**



3. **yes**



4. **no**



**Assignment:**

p.155-157 9-14, 24-28, 32, 33, 38, 39